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ABSTRACT

This guide focuses on the use of low-end technology to make education more inclusive for children and adolescents with disabilities. The definition of "assistive technology" is discussed, and low-end technology is defined as simple modification/adaptation of toys and games, design and construction of simple switching devices, and the adaptation/ modification of academic tasks and activities to enhance full student participation. Individual sections discuss: the importance of matching low-end technology design with a user's needs; basic tools and supplies for getting started in low-end technology; uses for single switches; characteristics of the user to consider in deciding what type of switch to construct; and ways to construct single switching devices including push switches, pull switches, squeeze switches, movement switches, and metal to metal switches. Contains a list of sources for print materials and catalogs. (DB)

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Positive Inclusion Experiences

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Arselia Ensign, Editor

We welcome as our Guest Editor for this issue our own Gayle Mefford. Her enthusiasm for this subject is contagious, as you will see.

Good Junk + Technology

What an experience! I need to share this with all the members of PIAM and readers of these publications. I had the good fortune of attending "Closing The Gap" conference in Minneapolis in October. This conference has earned a reputation internationally as a leading source for information on innovative applications of microcomputer technology for persons with disabilities. It was the 13th annual conference which has been built on a tradition of providing a comprehensive examination of the most current uses of technology by persons with disabilities and the professionals who work with them.

For one of the preconference day workshops, I chose a session that peaked my curiosity and my interest. Here in the midst of all the high technology applications was this workshop, labeled **Good Junk +Technology + Creativity= Positive Inclusion Experiences!** The descriptor of the course read, "The successful inclusion of children at-risk and children with disabilities requires that the classroom curriculum be accessible to all children. This workshop will focus on the design, creation, and infusion of technology into classroom curriculum where the technology is viewed as a tool, much like a pencil or pad of paper. The presenters will discuss and demonstrate inclusionary curriculum approaches, strategies, and devices which foster teamwork and collaboration among students, academic skills enhancement, creativity, and problem-solving." This session appeared to have the information I needed and could utilize, so consequently this workshop was my choice.

The workshop was presented by four women with impressive credentials, and I soon found out they classified themselves as "Four Weird Women with Lots of Great Junk!" It was a fun and informative day and with their permission I would like to share a portion of my handout, which actually contains excerpts from their book which is due to be published this month. Hopefully, you will find recreating "junk" for purposeful inclusion to be as informative and fun for you as it was for me!

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GOOD JUNK + TECHNOLOGY + CREATIVITY = POSITIVE INCLUSION EXPERIENCES

1995 Closing the Gap Conference
Preconference Workshop
Wednesday, October 18, 1994

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NOTE This handout is excerpted from the presenters' upcoming book: Good Junk + Creativity = Great Low-End Technology! Scheduled publication date: January, 1996.

INTRODUCTION

Technology is a real key to making education more inclusive for children and adolescents with disabilities. Frequently, the focus of technology for students with disabilities is on moderate to high-end equipment, software, and devices. When the focus remains at this level, budgetary constraints (real or imagined) seem to loom as the decision-making factor determining whether a student has access to technology, or technology is viewed as something that would "be nice" for the student, but "we can't afford it." It is at this point where the arena of low-end technology (teacher, therapist, peer, or family designed and created), may serve as an effective means to an end. The "end" being accommodation and inclusion in the classroom, home and community.

The federal definition of "Assistive Technology" is quite broad and flexible, and encompasses the entire spectrum of technology, from low- to high-end:

> "Assistive Technology is any item, piece of equipment or product or system, whether acquired commercially off the shelf, modified or customized that is used to increase, maintain or improve the functional capabilities of individuals with disabilities."
> (IDEA, Section 101(g), 1990)

The focus of the federal definition clearly parallels the primary goals of special education, habilitation, and therapeutic interventions in terms of increasing, maintaining and improving the skills and abilities of persons with disabilities. While high-end technology (i.e., electronic communication systems, environmental control systems, powered mobility, etc.) may be the end goal for a particular individual, the road to accomplishing that goal may well include the design and development of low-end technology "access bridges" along the way. Whether these "bridges" serve an evaluative function in terms of determining what characteristics and features are appropriate and salient for an individual user, or whether the "bridge" is used as an "in-between" measure until the more sophisticated technology arrives, the role of low-end technology in the arena of assistive technology is critical and can facilitate and support the full participation of an individual in daily life tasks and activities.

Low-end technology can also be a significantly powerful tool for inclusion. Low-end technology often facilitates inclusion experiences because it is less threatening and less overwhelming than more high-tech approaches. A working definition of low-end technology includes simple modification/adaptation of toys and games; the design and construction of simple switching devices; and the adaptation/modification of academic tasks and activities which supports and enhances a student's participation in classroom, community and daily life activities. Low-end technology usually involves creating devices from "great junk" and "leftover parts," and also includes creative "new" uses for "old" technology. It also involves innovative approaches and strategies for utilizing the technology available in school, home, and community settings, as well as the development of "low budget or no budget" low-end technology applications which support and facilitate the full inclusion of children and adolescents with disabilities.

Inclusion, in its broadest description, is supported by low-end technology design and creation permitting teachers, therapists, peers, and families to become creators of low-end technology devices, materials and applications. The creative "power" that emerges when teachers, therapists, peers and family members are faced with a collective accommodation/ adaptation situation, and provided with an array of "good junk and old parts," consistently results in the design and creation of unique and effective adaptive/assistive devices, strategies and techniques.

The user's peers may be the most creative and available resource in the design of low-end technology devices. No matter what age, peers are able to perceive what the user needs to access the social climate of the classroom and community. They are also reliable indicators of what is socially acceptable and unacceptable within peer groups and can provide valuable insight relative to acceptance or rejection of low-end technology devices. Nondisabled peers represent a potentially powerful, creative and enthusiastic resource for the development and enhancement of adaptive/assistive technologies for their peers with disabilities.

Peers are an important component in the social/emotional development of every child and adolescent. Therefore, it should be no surprise that students with disabilities are more likely to interact with and actively use devices and applications which were created by their peers. More importantly, activities and experiences which place nondisabled peers in the role of problem-solvers appear to foster increased acceptance of, and support for, peers with disabilities. Low-end technology devices and strategies are frequently more accepted by the user with disabilities when his/her peers are accepting of the device, and had a part in its creation. Therefore, when nondisabled peers are provided the freedom, support and direct experiences with adaptive and assistive technology, peers with disabilities become friends and equals.

Matching Low-End Technology Design with a User's Needs

When we design and create low-end technology devices, we need to consider the whole user. While the user's strengths and needs are important factors, we also need to consider the user's likes and dislikes, reactions to various stimuli, and what truly interests or "turns on" the user. We also need to ask ourselves, "What do we want the user to do?", and "Will this low-end technology device support the user in acquiring new skills and greater independence?".

In her book, Low Vision: A Resource Guide with Adaptations for Students with Visual Impairments, Nancy Levack proposes seven variables which should be considered when planning adaptations for persons with visual impairments. The considerations which Levack proposes are appropriate to the design of low-end technology (and other types of technology) for all individuals with disabilities, and provides a template for low-end technology design and construction.

> "1. When making decisions about adaptations, three areas must be considered. They include the student's visual abilities (acuity, visual fields, motility, brain functions, light and color reception), the stored and available individuality of the student (cognition, sensory developmental integration, perception, psychological makeup, physical makeup), and environmental cues (color, contrast, time, space, illumination). (Corn & Martinez, 1976)
>
> 2. Weigh the extent that the adaptation calls attention to the student and limits their performance of the task when the adaptation is not available, against the independence that they experience when using the adaptation.
>
> 3. Develop a realistic balance between what's possible and what is practical. Compromises may need to be made.
>
> 4. Sometimes it is most efficient to use a combination of environmental adaptations (adjusting lighting, highlighting or marking objects to be seen) and personal accommodation on the part of the student (moving closer, using a low vision device, wearing a visor to shade eyes from glare).
>
> 5. When possible, help the students to identify their own visual limitations while encouraging maximum visual efficiency by problem solving what kinds of adaptations might help.
>
> 6. Be alert for signs of frustration and fatigue which can signal the upper limits of visual functioning.
>
> 7. When these visual limits have been reached, problem solve alternative methods or adaptations which can ease the visual task."
>
> (Levack, 1991, pg. 96)

Although the language of these recommendations focus on vision, one can substitute the term "physical", "cognitive", "motoric", or "auditory" for the term "vision", and the recommendations support critical user characteristics in technology design, irrespective of disability type. For example, it is just as important to consider issues of user fatigue, or environment, or a user's personal accommodation strategies for a user with physical disabilities as it is for a user with visual disabilities.

Perhaps the single most important consideration to keep in mind in the design and development of low-end technology is that the adaptation/ accommodation you design is temporary. The design of low-end technology for any user is an ongoing endeavor, with the constant need to evaluate the impact of the technology, the user's mastery of the device or strategy, and the user's need for a more sophisticated and challenging approach. In other words, what you initially design and develop for a user should represent the first step of a development process, or a prototype of a device or strategy which can be enhanced and modified across time, based on the user's needs.

The "beauty" of low-end technology is that since it is low-cost or no-cost, constructed from "good junk" and "leftover parts", we can afford to modify, change and recreate it as the user's skills and needs become more and more refined. In other words, low-end technology permits us to "play" with our designs and strategies, gathering input from the user and others, until the device or strategy truly meets the user's needs. From this point we can then look to more sophisticated (and costly!) levels of technology to address the user's needs on a more permanent basis.

Getting Started on a Low-End Technology Adventure!

Once you've considered issues critical to the user, you're ready to gather your good "junk, stuff and parts", and let your creativity run wild! The best way to prepare for the design and creation of low-end technology is to locate a wide array of "good junk" and "leftover parts." You may also want to take a trip to your local "dollar" store, salvage stores, your neighbor's garage, your basement, junk drawers or closets, or any other location where good "stuff" is available for free or for extremely low-cost. It's also a good idea to gather basic tools and supplies. A recommended list of tools and supplies is included in the following section.

Basic Tools and Supplies

1. A good pair of scissors (We recommend the Fiskars brand - they'll cut almost anything!)
2. Glue gun and glue sticks
3. PVC Pipe Glue - it works well for adhering objects and gluing foam - it will "glue" almost anything, and it's less expensive (and toxic) than superglue.
4. Fabric Glue and Wood Glue
5. Colored masking tape, fabric tape and electrical tape
6. X-acto Knife or Utility knife
7. Solder gun (Radio Shack's "Cool Grip" Gun #64-2066) works well
8. Rosin core solder and Lead-free solder (available at Radio Shack)
9. Thin long-nose pliers
10. Wire stripper
11. Awl or ice pick
12. Markers - permanent, washable, and Vis-a-Vis (overhead transparency)
13. Ruler and tape measure
14. Any item that you think there must be some use for, but you haven't found it yet!
15. Any item that looks like it may have little or no value!

Tools and Supplies for Single Switch Construction (and for modification/construction of toys)

1. Small boxes and plastic containers
2. Screwdrivers (regular and Phillips)

3. Cardboard
4. Foam pieces and scraps
5. Wood pieces and scraps
6. Disposable aluminum pans and containers
7. Plastic lids from margarine and other containers
8. Copper pipe pieces and copper U-brackets
9. Small nuts and bolts, screws and nails
10. Small washers (1" size or smaller)
11. Stuffed toys or objects
12. Foam sheeting
13. Plexiglas sheets or pieces
14. Wire cutter
15. Double-sided foam tape
16. Double-sided carpet tape
17. Drill
18. Old Christmas tree lights (miniature)
19. Duct Tape
20. Various parts from Radio Shack:

1/8" 2-conductor Phone Plugs (red: #274-287/black: 274-286)
22 gauge, 2-conductor Speaker ("stereo") Wire (#278-1385)
SPST Soft-feel Momentary Switch (#275-1566)
SPST Mini Momentary Pushbutton Switch (#275-1556)
SPDT 3/4" Lever Switch (#275-016)
Mercury Bulb Switch (#275-040)
SPST Momentary Push Switch (#275-618)
"C" Battery Holder for 2 batteries (#270-385)
1/8" two conductor Open Frame Jack (#274-251)
Electronic Buzzer (#273-053)
9-Volt Battery Connectors (#270-325)

A commercial game adapted with a single switch

Once you've gathered your "good junk," tools and supplies, you're ready to begin to create, design and develop wonderful low-end technology! Talk to the user, the user's peers, family and friends, and gather creative ideas and suggestions, and consider the following topical areas for low-end technology usage:

1. Communication and choice-making
2. Developmental activities
3. Daily lesson/activity modifications which promote active learning
4. Peer/social interaction
5. Toy construction/modification
6. Single switch design/construction
7. Daily living activities and leisure/recreation access
8. Community interaction and access
9. Computer access
10. Promoting independence

Remember that Low-end Technology permits you to try creative accommodations to address sensory and motor needs. Keep the following thoughts in mind:

- When adapting materials consider the user's visual abilities, the user's unique characteristics, and the environmental cues.
- Make sure that your adaptation provides a realistic balance between what is possible and what is practical.
- Only adapt materials when necessary. Do not assume objects, games, or materials need to be adapted until you try them with the user.
- Whenever possible encourage the user to assist with the planning and "brainstorming" of adaptations. The user often knows what may work and what definitely will not work.
- When planning modification or adaptation of materials make sure your adaptations or modifications will be visually appealing and not call unnecessary attention to the user.
- Above all, remember that your adaptations are temporary, and check periodically to determine if any changes should be made.

SINGLE SWITCHING DEVICES

Single switching devices have a variety of uses for individuals with disabilities. They may function as a vehicle for the establishment of cause/effect relationships, forming the basis for the development of a wider and more sophisticated array of skills. They may serve as a functional environmental control device to permit the user to activate (and deactivate) items within the environment. Single switches may also play a role in the establishment and maintenance of purposeful motor movements and skills. They may also serve as a vehicle for communication or to support drill and practice activities in a classroom or home environment.

There are a wide array of single switching devices available on the commercial market. These commercially available switches are reliable and durable, and are designed to interface with battery powered devices, computers (through a switch interface), and electrical appliances and devices (through a control unit). Commercially produced switches may also be

quite expensive to purchase, and are often beyond the reach of many school, agency and family budgets. However, almost any type of commercially produced single switch can be created with a few, inexpensive electronics parts and a little creativity.

This section of the book will focus on the design and construction of single switching devices which are constructed with simple electronic parts, and which are custom designed to match a user's needs and interests. Construction of a single switching device is easy and fun, and we've seen some very creative and functional single switches designed and built by families, teachers, therapists, and most importantly, the user's peers. Any single switch which you construct will function and interface with the same battery powered toys and devices, computers and electronic appliances as commercially produced switches. The main difference is the cost of producing the switch and the ability to customize the switch to match the user's characteristics.

Basically, a single switch is simply an on/off mechanism which is designed to permit the user to independently activate a device, a computer, or other items within the environment. Most switches are wired to activate through the user's pressing, squeezing, pulling, or manipulating the switch, or through other purposeful movements. Some switches are designed to require some problem-solving on the part of the user in order for activation to occur. Some switches can be wired to be in the "on" position, requiring the user to activate the switch in order to turn off a device.

Characteristics of the User

When deciding what type of switch to construct, several user characteristics should be taken into consideration:

1. The user's cognitive abilities. Has the user established cause/effect relationships? If not, what type of switch, activating what type of device will have the greatest likelihood of facilitating the establishment of cause/effect relationships?

2. The user's communication level. Is the user verbal? nonverbal? Is the user currently using any type of communication device? If so, what type of device, and how is it activated? What is the user's level of receptive language?

3. The user's physical abilities and range of purposeful movements. Is the user ambulatory? What positioning considerations are important for the user? Does the user have greater upper body strength and coordination, or greater lower body strength and coordination? What are the user's most consistent purposeful movements? What movements are most comfortable for the user?

4. The user's sensory abilities. What are the user's visual abilities? auditory abilities? tactile abilities?

5. The user's environments. Where will the switch be used? At home? at work? at school? in the community? What type of demands does the user face in the environment where the switch will be used? What is the switch to activate within the environment?

6. The user's likes and dislikes. What shapes, objects, colors, textures does the user like, and more importantly, dislike? What shapes, objects, colors, etc., motivate the user to want to reach out and touch or interact with something?

7. The user's chronological age. What types of age appropriate materials can be used to house the switch? How can the switch best be designed to reflect the user's chronological age and be a good "match" with the user's environment?

8. The user's manifest and emerging skills. What skills is the user working on developing? What skill areas are most critical for the user (fine motor, cognitive, language, social, etc.)

In addition to the user's characteristics, it is important to remember that switches should always be used with specific goals and objectives in mind. These goals and objectives should be determined by the user's multidisciplinary team, with all team members assisting in determining what type(s) of switches are to be used, how the user should be positioned, the specific goals of switch use, and the environments where switches are to be used.

Uses for Single Switches

Single switches can promote the development and enhancement of a variety of skills. Some possibilities include:

- establishing cause/effect
- introducing and establishing object permanence
- establishing means/end relationships
- purposeful interaction with objects and devices
- increasing visual attending and visual tracking
- increasing attention span
- facilitating problem solving
- enhancing picture and/or object discrimination
- developing eye contact
- developing sound awareness and vocalization
- enhancing visual and auditory discrimination
- developing turn-taking skills
- decreasing tactile defensiveness
- decreasing self-stimulation
- facilitating interaction with peers and adults
- developing purposeful motor skills, i.e., reaching, grasping, etc.
- improving head and trunk control
- establishing a "yes/no" response
- indicating needs and choices
- facilitating making requests, greetings, telling jokes
- improving weight-bearing skills

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Types of Single Switches

There are basically five types of switches to be considered. The user's characteristics will help determine which type of switch you construct. Construction details and diagrams for each type of switch are contained in a subsequent section of this book.

Push Switches

A push switch can be made using any of the Radio Shack switches (with the exception of the Mercury Switch), or can be constructed using a "metal to metal" principle. When you design a push switch the most important considerations are:

1. The user's strength
2. How the switch is to be pushed (with what body part)
3. The user's ability to "get off" the switch after it is depressed

If the user has limited strength, then you want to choose a light touch switch, or one that is extremely sensitive (like the Radio Shack Lever Switch, or the Soft-Feel Switch). On the other hand, if the user has lots of strength, then you want to go with a more heavy duty switch (like the Radio Shack Momentary Push Switch). If you use the "metal to metal" approach, you are almost always assuming that the user has at least average strength.

How you house the push switch is where you get to be really creative! Consider how the switch is to be pushed (with what body part), and then consider the user's likes and dislikes, what attracts the user, etc. When you've thought about these things, then look around for a housing for the switch that matches with the user. Some examples include:

Stuffed Animals

Small Boxes - plastic or cardboard

Rubber Toys

Flat-bed Dump Truck

Round plastic boxes

Rubber thong sandals

Hinged lid boxes

Styrofoam "sandwich"

3-ring notebook

Anything that will enclose the switch and can be pushed down AND spring back

Pull Switches

Since "pull" is the opposite of "push", all of the design issues discussed for push switches apply...except in reverse. Again, you need to think about strength, how the switch is to be pulled, and the user's likes and dislikes. You also need to consider how the user will "grab onto" the pull, and how much accuracy the user has in connecting with the pull. How the switch will be mounted is also an issue to consider. The Radio Shack Soft Feel switch works well for a pull switch, and the "metal to metal" principle works even better. Some possible examples of housing for a pull switch are:

35 mm film canisters

Cylindrical metal cans

Cylindrical cardboard tubes with metal bottoms

Squeeze Switches

Many of the same considerations in the design of push switches need to be considered when constructing a squeeze switch. You also need to consider how the switch is to be squeezed: against the body, in the hand, between two hands, between the knees, etc. This will obviously determine the size of the switch. Radio Shack Lever Switches work well for squeeze switch construction, or you can use a "metal to metal" approach. (Linda Burkhart has an excellent squeeze switch detailed in her book which uses copper tubing and copper u-brackets.) Housing the squeeze switch again calls for creativity coupled with user likes and dislikes. Some possibilities include:

Soft plastic water squeeze toys

Foam bicycle grips

Foam sheeting

Small stuffed animals or toys

Foam "sandwich"

Old neckties

Socks

Plastic Tubes

Movement Switches

Designing a movement or motion switch involves considering what movement you want to reinforce, and what movement you want to extinguish. For example, if you want to work on a user's head remaining in midline, then you want the motion switch to be activated when the user's head is in the appropriate position, and you want to switch to be deactivated when the position is inappropriate. The major consideration in the design of the switch is how the switch is placed to be sensitive to the appropriate motion, movement or position. The Radio Shack Mercury Switch works very well for movement switches, and is a relatively durable switch. You need to be sure that the glass bulb of the switch (which contains the mercury) is secured inside the housing of the switch, so there is no possibility of injury to the user through glass breakage or mercury leakage.

Some possible ideas for housing a movement switch are:

On a headband

On a barrette

On a baseball cap

On a rolling or rocking toy

On a sweatband

On a bandanna

On a belt

Metal to Metal Switches

"Metal to metal" switches are switches which are truly created from junk! Any two pieces of metal will work to complete the electrical circuit and activate the switch. If you use metal cans, you will need to sand the metal parts where the connection is to be made to remove

the glossy sealant which protects foods which are packaged in cans. You will find that copper is a great conductor, as are pieces of disposable aluminum pans, and metal washers.

Possible housings for "metal to metal" switches are:

Metal pan and metal object

Metal cans and copper pipe

Plastic report covers or tagboard and disposable aluminum pan pieces

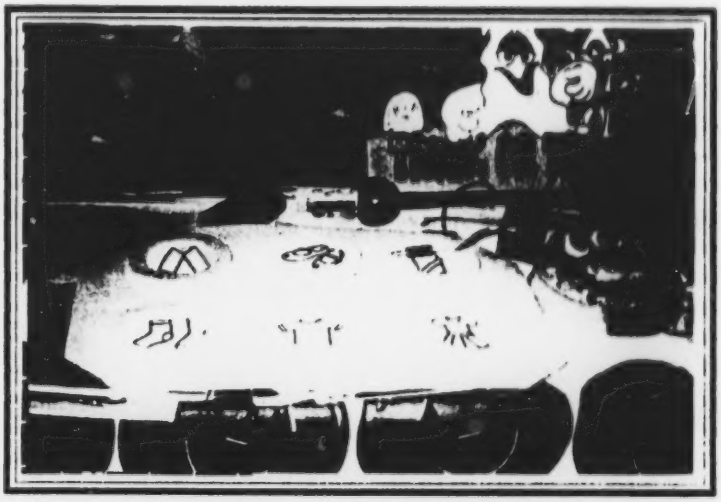
Metal cans & copper u-brackets

Foam sheeting and disposable aluminum pan pieces

Single-fold checkbook covers, wallets, date books, etc. and disposable aluminum pan pieces

Note:

A second publication will feature Communication, Interaction and Choice Making, also Thinking About Augmentative Alternative/ Assistive Communication and Ideas for Low-Tech Communication and Choice Making.



One of many homemade communication devices displayed at the workshop featuring "Good Junk + Technology + Creativity = Positive Inclusion Experiences.

Resources

Printed Materials

Alan Berger & Kathy Bollbach
Adaptive Switch Technology Birth to Five Years
Steppingstone Day.School, Inc.
77-40 Vleyn Place
Kew Garden Hills, NY 11367

Home-made switch examples and curricular guide for using switches

Linda J. Burkhart
Homemade Battery Powered Toys and Educational Devices for Severely Handicapped Children
and,
More Homemade Battery Devices for Severely Handicapped Children with Suggested Activities
Special Needs Project
1482 East Valley Road #A-121
Santa Barbara, CA 93108
1 (800) 333-6867

Home-made switches, toys and modifications

Linda Burkhart
Using Computers and Speech Synthesis to Facilitate Communicative Interaction with Young and/or Severely Handicapped Children
Linda J. Burkhart
6201 Candle Court
Eldersburg, MD 21784

Low-Tech and high-tech modifications and adaptations addressing communication

Linda Burkhart
Total Augmentative Communication in the Early Childhood Classroom
Linda J. Burkhart
6201 Candle Court
Eldersburg, MD 21784

Resource material relative to augmentative communication, including low- and high-tech modifications and adaptations

Faith Carlson
PICSYMS
Don Johnston Developmental Equipment, Inc.
P.O. Box 639
1000 N. Rand Road, Bldg. 115
Wauconda, IL 60084-0639
1 (800) 999-4660

Communication symbols

Carol Goossens' & Sharon Sapp Crain
Utilizing Switch Interfaces with Children who are Severely Physically Challenged
Pro-Ed
8700 Shoal Creek Blvd.
Austin, TX 78758

Resource material for low- and high-tech single switch use

Ina J. Kirstein
Oakland Schools Picture Dictionary
Don Johnston Developmental Equipment, Inc.
P.O. Box 639
1000 N. Rand Road, Bldg. 115
Wauconda, IL 60084-0639
1 (800) 999-4660

Communication symbols

Jackie Levin & Kathy Enselein
Fun for Everyone
Ablenet, Inc.
1081 Tenth Avenue S.E.
Minneapolis, MN 55414-1312
1 (800) 322-0956

Adaptation/modification of leisure activities, toys, games & appliances

Roxanna Mayer Johnson
Picture Communication Symbols, Books I, II & III
Mayer Johnson Company
P.O. Box 1579
Solana Beach, CA 92075-1579
(619) 481-2489

Communication symbols

Christine Wright & Mari Nomura
From Toys to Computers
Don Johnston Developmental Equipment, Inc.
P.O. Box 639
1000 N. Rand Road, Bldg. 115
Wauconda, IL 60084-0639
1 (800) 999-4660

Modification and construction of toys, switches and positioning devices

Companies and Catalogues

All Electronics Corporation
P.O. Box 567
Van Nuys, CA 91408
1 (800) 862-5432

Discount electronics catalogue outlet

Karton Koolers
Fun Designs, Inc.
P.O. Box 2837
Duxbury, MA 02332

"Mouse houses"

Midwestern Home Products
Wilmington, Delaware 19803

Lots of great "stuff" for low-tech devices and modifications

One Step Ahead
P.O. Box 517
Lake Bluff, IL 60044
1 (800) 274-8440

Supplier of "The First Years" toys and other infant/toddler items

Oriental Trading Company P.O. Box 2308 Omaha, NE 68103-0407	Good source for small objects for low-tech devices
Radio Shack	"The" source for switch building "parts", and for supplies for toy adaptation and modifications

Reference Materials

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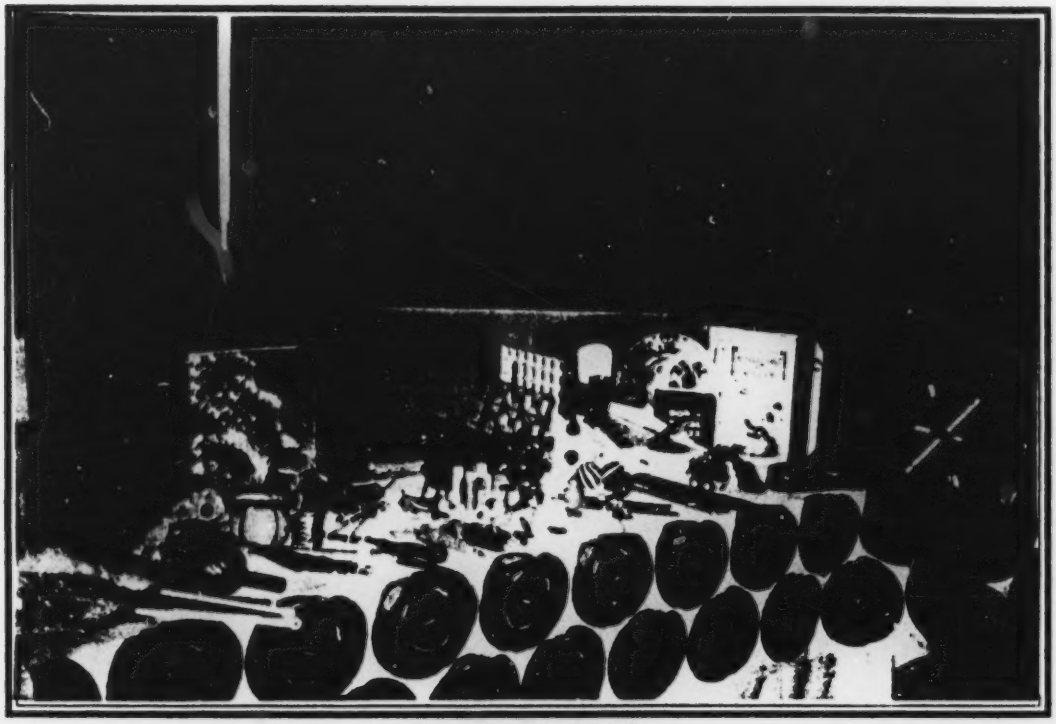

Pumpkin clad table

One of many tables of "Good Junk" displayed at a pre-conference workshop held at Closing the Gap Conference.

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